Listing of Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Claim1. (Currently amended): A disposable cassette for conducting electrophoresis, wherein the cassette comprises:

i) an enclosed chamber having a top wall, a bottom wall, two side walls, a first end wall and a second end wall, wherein;

the top wall comprises one or more apertures;

the bottom wall is contiguous, and

the chamber comprises a first region, a second region and a third region, wherein ~~a first region comprising the one or more apertures; a~~ the second region is located between the first end wall and the third ~~first~~ region, ~~and a~~ the first ~~third~~ region is located between the second end wall and the third ~~first~~ region, and ~~wherein~~ the third ~~first~~ region is located between the second region and the first ~~third~~ region, ~~and the first region, the second region and the third region are located between the top wall and the bottom wall~~ and wherein the one or more apertures of the top wall are located above and adjacent to the third region;

and wherein the chamber comprises an electrophoresis area;

ii) an electrophoresis gel matrix contained within the enclosed chamber, wherein;

the electrophoresis gel matrix comprises one or more wells located below the one or more apertures; and

the electrophoresis gel matrix comprises an electrolyte;

iii) at least one anode located within either the second region or the first ~~third~~ region; and

iv) at least one cathode located within either the second region or the first ~~third~~ region,

provided that the anode and the cathode are not together in the same region.

Claim 2. (Currently amended): The disposable cassette of claim 1, wherein the third region is not sealed and either the second region or the first ~~third~~ region is sealed, or the third region is not sealed and both the second region and the first ~~third~~ region are sealed.

Claim 3. (Currently amended): The disposable cassette of claim 1, wherein the anode comprises an ~~electrochemical~~ electrochemically ionizable conducting material, wherein the ~~electrochemical~~ electrochemically ionizable conducting material is electrochemically ionizable during the electrophoresis.

Claim 4. (Currently amended): The disposable cassette of claim 3, wherein the ~~electrochemical~~ electrochemically ionizable conducting material is a metal.

Claim 5. (Previously presented): The disposable cassette of claim 4, wherein the metal comprises copper.

Claim 6. (Previously presented): The disposable cassette of claim 4, wherein the metal comprises silver or lead.

Claim 7. (Previously presented): The disposable cassette of claim 1, wherein the anode comprises an oxygen-absorbing material.

Claim 8. (Previously presented): The disposable cassette of claim 1, wherein the anode is selected from the group consisting of aluminum and carbon.

Claim 9. (Previously presented): The disposable cassette of claim 1, wherein the electrophoresis gel matrix is substantially free from oxygen gas during the electrophoresis.

Claims 10-11. (Cancelled)

Claim 12. (Previously presented): The disposable cassette of claim 1, wherein the apertures corresponding to the one or more wells are spaced at predetermined intervals so as to conform with intervals between tips on a multi-pipette loader.

Claim 13. (Previously presented): The disposable cassette of claim 12, wherein the apertures are arranged in one or more rows.

Claim 14. (Currently amended): The disposable cassette of claim 12 wherein the apertures are arranged in two or more ~~row~~ rows and the rows are arranged in a stagger format.

Claims 15-17. (Cancelled).

Claim 18. (Previously presented): The disposable cassette of claim 1, wherein the cassette further comprises

a matrix, wherein the matrix is in contact with the cathode, and the matrix comprises at least one water sparingly soluble salt;

and wherein during the electrophoresis the electrophoresis gel matrix comprises at least one water sparingly soluble salt ion.

Claim 19. (Previously presented): The disposable cassette of claim 1, wherein the cathode comprises a hydrogen-absorbing material.

Claim 20. (Previously presented): The disposable cassette of claim 1, wherein the cathode is selected from the group consisting of palladium, carbon and metal hydrides.

Claim 21. (Previously presented): The disposable cassette of claim 1, wherein the electrophoresis gel matrix is substantially free from hydrogen gas during the

electrophoresis.

Claims 22-49. (Cancelled)

Claim 50. (Previously presented): The disposable cassette of claim 89, wherein the electrophoresis gel matrix is substantially free from oxygen gas during the electrophoresis.

Claims 51-52. (Cancelled)

Claim 53. (Previously presented): The disposable cassette of claim 93, wherein the anode comprises an electrochemically ionizable metal.

Claim 54. (Currently amended) The disposable cassette of claim 53, wherein the electrochemically ionizable ~~the~~ metal comprises copper.

Claim 55. (Currently amended) The disposable cassette of claim 53, wherein the electrochemically ionizable ~~the~~ metal comprises silver.

Claim 56. (Currently amended) The method ~~disposable cassette~~ of claim 94, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE)~~TBE~~.

Claim 57. (Cancelled)

Claim 58. (Previously presented) The disposable cassette of claim 93, wherein said apertures corresponding to the one or more wells are spaced at predetermined intervals so as to conform with intervals between tips on a multi-pipette loader.

Claim 59. (Previously presented) The disposable cassette of clam 58, wherein the

apertures corresponding to the one or more wells are arranged in one or more rows.

Claim 60. (Currently amended) The disposable cassette of claim 58, wherein the apertures are arranged in two or more ~~row~~ rows and the rows are arranged in a stagger format.

Claim 61. (Cancelled)

Claim 62. (Previously presented): The disposable cassette of claim 85, wherein the anode comprises an electrochemically ionizable metal.

Claim 63. (Previously presented) The disposable cassette of claim 62, wherein the electrochemically ionizable metal comprises copper.

Claim 64. (Currently amended) The disposable cassette of claim 62, wherein the electrochemically ionizable ~~the~~ metal comprises silver.

Claim 65. (Currently amended) The disposable cassette of claim 95, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE)~~TBE~~.

Claim 66. (Cancelled)

Claim 67. (Previously presented) The disposable cassette of claim 62, wherein the apertures corresponding to the one or more wells are spaced at predetermined intervals so as to conform with intervals between tips on a multi-pipette loader.

Claim 68. (Previously presented) The disposable cassette of claim 67, wherein the apertures corresponding to the one or more wells are arranged in one or more rows.

Claim 69. (Currently amended) The disposable cassette of claim 67, wherein the apertures are arranged in two or more ~~row~~ rows and the rows are arranged in stagger format.

Claim 70. (Cancelled)

Claim 71. (Currently amended) A method for performing electrophoresis, the method comprising the steps of:

i) providing a disposable cassette, wherein the cassette comprises:

an enclosed chamber having a top wall, a bottom wall, two side walls, a first end wall and a second end wall, wherein;

the top wall comprises one or more apertures;

the bottom wall is contiguous, and

the chamber comprises a first region, a second region and a third region, wherein ~~a first region comprising the one or more apertures; a~~ the second region is located between the first end wall and the third ~~first~~ region, ~~and a~~ the first ~~third~~ region is located between the second end wall and the third ~~first~~ region, and ~~wherein~~ the third ~~first~~ region is located between the second region and the first ~~third~~ region, ~~and the first region, the second region and the third region are located between the top wall and the bottom wall~~ and wherein the one or more apertures of the top wall are located above and adjacent to the third region;

and wherein the chamber comprises an electrophoresis area;

an electrophoresis gel matrix contained within the enclosed chamber, wherein the electrophoresis gel matrix comprises one or more wells located below the one or more apertures and wherein the electrophoresis gel matrix comprises an electrolyte;

at least one anode located within the second region or the first ~~third~~ region, and

at least one cathode located within the second region or the first ~~third~~ region, provided that the anode and the cathode are not together in the same region;

ii) loading one or more samples into the one or more wells through the one or more apertures; and

iii) applying an electrical field to the electrophoresis gel matrix thereby performing electrophoresis.

Claim 72. (Cancelled)

Claim 73. (Previously presented) The method of claim 71, further comprising degrading a sparingly water-soluble salt in contact with the at least one cathode by the application of the electrical field thereby releasing ions required for maintaining the electrical field.

Claim 74. (Cancelled)

Claim 75. (Currently amended) The method of claim 71, further comprising the step of degrading the anode by the application of the electrical field, thereby releasing ions required for maintaining the electrical field, wherein the anode comprises ~~at least one~~ an electrochemically ionizable conducting material ~~by the application of the electrical field, thereby releasing ions required for maintaining the electrical field~~.

Claim 76. (Cancelled)

Claim 77. (Currently amended) A method for electrophoresis, the method comprising the steps of: applying an electrical field to a gel comprising one or more wells, wherein the gel is contained within a disposable cassette comprising one or more apertures ; degrading a metal anode by said application of said electrical field; releasing ions required for maintaining an electrical field by said degradation, and inhibiting migration

of said ions in the vicinity of said anode.

Claim 78. (Cancelled)

Claim 79. (Currently amended) The method of claim [[71]] 75, wherein the electrolyte is of a composition that inhibits migration of ions generated during the step of degrading the anode by the application of the electrical field ~~degradation of the at least one electrochemically ionizable anode~~.

Claim 80. (Currently amended) The method of claim 79, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE)~~TBE~~.

Claim 81. (Currently amended) The disposable cassette of claim 3, wherein the electrolyte is of a composition that inhibits the migration of ions generated during an electrochemical reaction of the ~~electrochemical~~ electrochemically ionizable conducting material.

Claim 82. (Currently amended) The disposable cassette of claim 81, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE)~~TBE~~.

Claim 83-84. (Cancelled)

Claim 85. (Currently amended): The disposable cassette of claim 1, wherein the at least one anode is located within the second region and the at least one cathode is located within the third region.

Claim 86. (Currently amended): The disposable cassette of claim 1, wherein the at least one anode is located within the third region and the at least one cathode is located within the second region.

Claim 87. (Currently amended): The disposable cassette of claim 1, wherein the at least one anode or the at least one cathode is embedded within the electrophoresis gel matrix.

Claim 88. (Currently amended) The disposable cassette of claim 1, wherein the electrophoresis gel matrix further comprises ions generated during an electrochemical reaction of the anode during the electrophoresis.

Claim 89. (Currently amended) The disposable cassette of claim 1, wherein the electrolyte is of a composition that inhibits the migration of ions generated during the electrochemical reaction of the anode.

Claim 90. (Currently amended) The disposable cassette of claim 91, wherein the electrolyte is selected from the group consisting of Bis-Tris-Tricine, Bis-Tris-Bicine, Tris-Glycine, Bis-Tris-Glycilglycine, Amino methyl propanol-Proline, and Tris-Borate EDTA (TBE)~~TBE~~.

Claim 91 . (Currently amended): The disposable cassette of claim 1, wherein the at least one anode and the at least one cathode are embedded within the electrophoresis gel matrix.

Claim 92. (Cancelled)

Claim 93. (Currently amended) The disposable cassette of claim 62, wherein the electrolyte is of a composition that inhibits the migration of ions generated during the electrochemical reaction of the anode.

Claim 94. (Currently amended) The method of claim 71, wherein the third region is not sealed and either the second region or the first ~~third~~ region is sealed before and during performing the electrophoresis, or the first region is not sealed and both the second region and the first ~~third~~ region are sealed before and during performing the electrophoresis.

Claim 95. (Currently amended) The ~~device~~ disposable cassette of claim 1, wherein the top wall is sealed to the side walls.

Claim 96. (Currently amended) The ~~device~~ disposable cassette of claim 95, wherein the top wall is sealed to the to the first end wall and the second end wall.

Claim 97. (Previously presented) The method of claim 71, wherein the top wall is sealed to the side walls before and during performing electrophoresis.

Claim 98. (Previously presented) The method of claim 97, wherein the top wall is sealed to the to the first end wall and the second end wall before and while performing electrophoresis.

Claim 99. (Currently amended) The ~~device~~ disposable cassette of claim 1, wherein the bottom wall is ~~planar~~ flat.

Claim 100. (Currently amended) The method of claim 71, wherein the bottom wall is ~~planar~~ flat.

Claim 101. (New) The disposable cassette of claim 1, further comprising a comb having one or more teeth protruding through the one or more apertures into the electrophoresis gel matrix.

Claim102. (New): A disposable cassette for conducting electrophoresis, wherein the cassette comprises:

i) an enclosed chamber having a top wall, a bottom wall, two side walls, a first end wall and a second end wall, wherein;

the top wall comprises one or more apertures;

the bottom wall is contiguous and flat, and

the chamber comprises a first region, a second region and a third region, wherein the second region is located between the first end wall and the third region, the first region is located between the second end wall and the third region, and the third region is located between the second region and the first region, and wherein the one or more apertures of the top wall are located above and adjacent to the third region;

and wherein the chamber comprises an electrophoresis area;

ii) an electrophoresis gel matrix contained within the enclosed chamber, wherein;

the electrophoresis gel matrix comprises one or more wells located below the one or more apertures; and

the electrophoresis gel matrix comprises an electrolyte;

iii) at least one anode located within either the second region or the first region, and

iv) at least one cathode located within either the second region or the first region,

provided that the anode and the cathode are not together in the same region.